

REMARKS

Status of the Application

Claims 1-43 were pending. The Office Action rejected claims 1-11 and 13-43, and objected to claim 12. By way of this amendment, claims 1, 22, 35 and 41 are amended.

Allowable Subject Matter

Applicants acknowledge with appreciation the indication that dependent claim 12 would be allowable if rewritten in independent form.

Rejection under 35 U.S.C. §112

Claim 35 was rejected under 35 U.S.C. §112, second paragraph because “said second class” lacked antecedent basis. Claim 35 has been amended to provide antecedent basis to the “second class.” Accordingly, withdrawal of the rejection is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1-3, 6, 7, 9-11, 14, 22-25, and 27-30: Rejected over Hwang and Foschini

Claims 1-3, 6, 7, 9, 10, 11, 14, 22-25, and 27-30 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over U.S. Patent Application Pub. No. 2004/0052236 (hereinafter “Hwang”) in view of U.S. Patent Application Pub. No. 2003/0104808 (hereinafter “Foschini”). Applicants respectfully request reconsideration and withdrawal of the rejection.

With respect to claim 1, it is amended and now recites “obtaining first data to be delivered to multiple user devices via a common channel; obtaining second data to be delivered to a specific user device via a dedicated channel; acquiring channel information for a common channel between a transmitter and said specific user device; and generating a transmit signal for said specific user device using said first data (i.e., common channel data), said second data (i.e. dedicated channel data), and said channel information (i.e., for the common channel), said transmit signal to be transmitted from said transmitter to said specific user device via said

dedicated channel.” The alleged combination of Hwang and Foschini does not teach or suggest all these elements.

For example, neither Hwang nor Foschini discloses or suggests generating a transmit signal for transmission to a specific user device via a dedicated channel using first data that is to be delivered to multiple user devices via a common channel as recited in claim 1. Although Hwang describes transmitting both common channels signals and dedicated channels signals, Hwang makes clear that common channel data is not at all used to generate the dedicated channel signal. For instance, Fig. 16 of Hwang is a diagram of a transmitter, and clearly shows that common channel signals (1626) and dedicated channel signals (output of mux 1609 and 1625) are merely added together after they have been generated. Although the adder 1610 of Hwang generates a combined signal that includes the dedicated channel signals and the common channel signals, it cannot be said that the output of the adder 1610 corresponds to a “transmit signal to be transmitted from said transmitter to said specific user device via said dedicated channel” as recited in claim 1.

Moreover, as is admitted in the Office Action, Hwang also does not disclose generating a transmit signal for transmission to a specific user device via a dedicated channel using channel information for a common channel as recited in claim 1.

Similarly, Foschini also does not teach, disclose or suggest “generating a transmit signal for said specific user device via said dedicated channel using said first data, said second data, and said channel information (i.e., for the common channel), said transmit signal to be transmitted from said transmitter to said specific user device via said dedicated channel” as recited in claim 1. In fact, Foschini does not appear to teach anything about transmitting common channels or using common channel information to generate signals to be transmitted via a dedicated channel.

At least for these reasons, claim 1 is allowable over Hwang and Foschini.

At least for the same reasons as those discussed above with respect to claim 1, dependent claims 2, 3, 6, 7, 9, 10, 11 and 14 are allowable over Hwang and Foschini.

At least for reasons similar to those discussed above with respect to claim 1, claims 22-25 are allowable over Hwang and Foschini.

With regard to claim 27, Applicants respectfully traverse the rejection because the Office Action failed to establish a prima facie case of obviousness. To establish a prima facie case of obviousness, all claim elements must be taught or suggested. *See* MPEP §2143.03. Here, the Office Action failed to establish that the alleged combination of Hwang and Foschini teaches or suggests all the elements of claim 27.

Claim 27 recites “generating transmit signals to be transmitted to user devices associated with said first class without using dirty paper techniques; and generating transmit signals to be transmitted to user devices associated with said second class using said first data, said second data, and said channel information.” The Office Action failed to establish that the alleged combination of Hwang and Foschini teaches or suggests these elements in combination with the other elements of claim 27.

Although Hwang describes transmitting multiple channel signals, Hwang makes clear that data corresponding to each channel is not at all used to generate the dedicated channel signals corresponding to other channels. For instance, Fig. 16 of Hwang is a diagram of a transmitter, and clearly shows that dedicated channel signals (output of mux 1609 and 1625) are merely added together after they have been generated. Although the adder 1610 of Hwang generates a combined signal that includes the different dedicated channel signals, it cannot be said that the output of the adder 1610 corresponds to “signals to be transmitted to user devices associated with said second class using said first data (i.e., data to be delivered to devices associated with the first class), said second data, and said channel information” as recited in claim 27.

Foschini, on the other hand, describes using dirty paper techniques in connection with transmissions from a base station to mobile devices. *See Foschini* at pars. 0040-0045. But Foschini does not disclose or suggest generating transmit signals to be transmitted to a first class of user devices without using dirty paper techniques and generating transmit signals to be transmitted to a second class of user devices using data to be delivered to the first class of user devices as recited in claim 27.

At least for these reasons, the Office Action failed to establish a prima facie case of obviousness of claim 27.

At least for the same reasons as those discussed above with respect to claim 27, the Office Action failed to establish a prima facie case of obviousness of claims 28-30.

Claims 15-17, 19, 20, 35-37, 41 and 43: Rejected over Fitton and Foschini

Claims 15-17, 19, 20, 35-37, 41 and 43 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over U.S. Patent Application Pub. No. 2004/0028121 (hereinafter “Fitton”) in view of Foschini. Applicants respectfully traverse the rejection, at least because the Office Action failed to establish that the alleged combination of Fitton and Foschini teaches or suggests all the elements of each of claims 15-17, 19, 20, 35-37, 41 and 43.

With respect to claim 15, it recites “a common channel interference unit to determine a common channel interference component associated with a remote user device; and a transmit signal generator to generate a transmit signal to be transmitted to said remote user device via a dedicated channel, said transmit signal generator using said common channel interference component and dedicated data to generate said transmit signal.” The Office Action failed to establish that the alleged combination of Fitton and Foschini teaches or suggests all these elements.

For example, neither Hwang nor Foschini discloses or suggests generating a transmit signal to be transmitted to said remote user device via a dedicated channel using a common channel interference component as recited in claim 15. The Office Action alleged that

Fitton discloses the recited common channel interference unit at paragraph 0081, and discloses a transmit signal generator at paragraphs 0013 and 0091. But paragraphs 0081 and 0091 of Fitton are related to a receiver, and thus disclose nothing about generating transmit signals or generating a common channel interference component that is used to generate a transmit signal. With regard to paragraph 0013, it merely discusses types of common channels in 3G mobile phone systems.

The Office Action cited paragraph 0027 of Foschini as allegedly disclosing generating a transmit signal using a common channel interference component. But paragraph 0027 of Foschini describes how a base station decodes uplink signals 125₅₁, 125₅₂ and 125₅₃. In other words, paragraph 0027 of Foschini describes how signals received by a base station are processed by the base station. This paragraph of Foschini teaches nothing about generating a transmit signal, let alone generating a transmit signal to be transmitted via a dedicated channel using a common channel interference component as recited in claim 15.

At least for these reasons, the Office Action failed to establish a prima facie case of obviousness of claim 15.

At least for the same reasons as those discussed above with respect to claim 15, the Office Action failed to establish a prima facie case of obviousness of claims 16 and 17.

At least for reasons similar to those discussed above with respect to claim 15, the Office Action failed to establish a prima facie case of obviousness of claims 19 and 20.

With regard to claim 35, it recites “an interference unit to collect data to be delivered to user devices within a first class via corresponding dedicated channels and to use the collected data to generate a composite interference signal; and a transmit signal generator to generate transmit signals to be transmitted to user devices associated with said first class without using dirty paper techniques, and to generate transmit signals to be transmitted to user devices within a second class via corresponding dedicated channels using said composite interference signal, dedicated data to be delivered to said user devices within said second class, and channel

information associated with said user devices within said second class.” The Office Action failed to establish that the alleged combination of Fitton and Foschini teaches or suggests all of these elements.

For example, the Office Action alleged that paragraph 0081 of Fitton discloses an interference unit as recited in claim 35. But this portion of Fitton relates to a receiver. Fitton teaches nothing about using a composite interference signal generated by an interference unit to generate transmit signals. Moreover, Fitton teaches nothing about generating transmit signals to be transmitted to a first class of user devices without using dirty paper techniques and generating transmit signals to be transmitted to a second class of user devices using a composite interference signal, the composite interference signal generated using data to be delivered to the first class of user devices as recited in claim 35.

Foschini, on the other hand, describes using dirty paper techniques in connection with transmissions from a base station to mobile devices. *See Foschini* at pars. 0040-0045. But Foschini does not disclose or suggest generating transmit signals to be transmitted to a first class of user devices without using dirty paper techniques and generating transmit signals to be transmitted to a second class of user devices using a composite interference signal, the composite interference signal generated using data to be delivered to the first class of user devices as recited in claim 35.

At least for these reasons, the Office Action failed to establish a prima facie case of obviousness of claim 35.

At least for the same reasons as those discussed above with respect to claim 55, the Office Action failed to establish a prima facie case of obviousness of claims 36 and 37.

With regard to claim 41, it is amended and now recites “generating, using common channel information, a transmit signal for transmission to a remote user device via a dedicated channel that is pre-configured to cancel common channel interference within said remote user device upon reception; and transmitting said transmit signal.” The Office Action

failed to establish that the alleged combination of Fitton and Foschini teaches or suggests all these elements.

The Office Action alleged that Fitton discloses “generating a transmit signal for transmission to a remote user device via a dedicated channel that is pre-configured to cancel common channel interference within said remote user device upon reception” at paragraphs 0013, 0087 and 0091. But paragraphs 0087 and 0091 relate to operation of a receiver, not a transmitter, and paragraph 0013 does not disclose or suggest “generating, using common channel information, a transmit signal for transmission to a remote user device via a dedicated channel that is pre-configured to cancel common channel interference within said remote user device upon reception.” It cannot be said that Fitton teaches anything about generating a transmit signal for transmission via a dedicated channel using common channel information. Foschini also does not teach anything about generating a transmit signal for transmission via a dedicated channel using common channel information.

At least for these reasons, claims 41 and 43 are allowable over Fitton and Foschini.

Claim 8: Rejected over Hwang and Nishio

Claim 8 was rejected under 35 U.S.C. §103 as being unpatentable over Hwang in view of U.S. Patent Application Pub. No. 2006/0166690 (hereinafter “Nishio”). Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 8 depends from claim 1 and therefore includes all of the elements of claim 1. As discussed above, Hwang does not disclose or suggest all of the elements of claim 1. Similarly, Nishio does not disclose or suggest the element of claim 1 that are not taught or suggested by Hwang. At least for these reasons, claim 8 is allowable over Hwang and Nishio.

Claims 13, 26 and 34: Rejected over Hwang, Foschini and Shany

Claims 13, 26 and 34 were rejected under 35 U.S.C. §103 as being unpatentable over Hwang in view of U.S. Patent Application Pub. No. 2004/0030979 (hereinafter “Shany”) and in further view of Foschini. Applicants respectfully request reconsideration and withdrawal of the rejection.

Claim 13 depends from claim 1 and claim 26 depends from claim 22. Therefore, claims 13 and 26 recite “acquiring channel information for a common channel between a transmitter and said specific user device; and generating a transmit signal for said specific user device using said first data (i.e., data to be delivered to multiple user devices via the common channel), said second data (i.e., data to be delivered to a specific user device via a dedicated channel), and said channel information, said transmit signal to be transmitted from said transmitter to said specific user device via said dedicated channel.” As discussed above, Hwang and Foschini do not teach or suggest at least these elements. Also, Shany does not teach or suggest at least these elements. At least for these reasons, claims 13 and 26 are allowable over the alleged combination of Hwang, Shany and Foschini.

Claim 34 depends from claim 27 and therefore recites “obtaining first data to be delivered to user devices associated with a first class via corresponding dedicated channels; obtaining second data to be delivered to user devices associated with a second class via corresponding dedicated channels; acquiring channel information from user devices associated with said second class; and generating transmit signals to be transmitted to user devices associated with said second class using said first data, said second data, and said channel information.” As discussed above, the Office Action failed to establish that Hwang and Foschini teach or suggest at least these elements. Also, the Office Action failed to establish that Shany teaches or suggests at least these elements. At least because the Office Action failed to establish that the alleged combination of Hwang, Shany and Foschini teaches or suggests every element of claim 34, the Office Action did not establish a prima facie case of obviousness.

Claims 18, 21, 39 and 42: Rejected over Fitton, Shany and Foschini

Claims 18, 21, 39 and 42 were rejected under 35 U.S.C. §103 as being unpatentable over Fitton in view of Shany and in further view of Foschini. Applicants respectfully traverse the rejection.

Claim 18 depends from claim 15 and therefore recites “a common channel interference unit to determine a common channel interference component associated with a remote user device; and a transmit signal generator to generate a transmit signal to be transmitted to said remote user device via a dedicated channel, said transmit signal generator using said common channel interference component and dedicated data to generate said transmit signal.” As discussed above, the Office Action failed to establish that the alleged combination of Fitton and Foschini teaches or suggests all these elements. Also, the Office Action failed to establish that Shany teaches or suggests these elements. At least because the Office Action failed to establish that the alleged combination of Fitton, Shany and Foschini teaches or suggests every element of claim 18, the Office Action did not establish a prima facie case of obviousness.

At least for reasons similar to those discussed above with respect to claim 18, the Office Action did not establish a prima facie case of obviousness of claim 21.

With regard to claim 39, it depends from claim 35 and therefore recites “an interference unit to collect data to be delivered to user devices within a first class via corresponding dedicated channels and to use the collected data to generate a composite interference signal; and a transmit signal generator to generate transmit signals to be transmitted to user devices associated with said first class without using dirty paper techniques, and to generate transmit signals to be transmitted to user devices within a second class via corresponding dedicated channels using said composite interference signal, dedicated data to be delivered to said user devices within said second class, and channel information associated with said user devices within said second class.” As discussed above with respect to claim 35, the Office Action failed to establish that Fitton and Foschini teach or suggest at least all of these elements. Also, the Office Action failed to establish that Shany teaches or suggests at least all of

these elements. At least because the Office Action failed to establish that the alleged combination of Fitton, Shany and Foschini teaches or suggests every element of claim 39, the Office Action did not establish a prima facie case of obviousness.

With respect to claim 42, it depends from claim 41 and therefore recites “generating, using common channel information, a transmit signal for transmission to a remote user device via a dedicated channel that is pre-configured to cancel common channel interference within said remote user device upon reception; and transmitting said transmit signal.” As discussed above with respect to claim 41, Fitton and Foschini do not teach or suggest at least all of these elements. Also, Shany does not teach or suggest at least all of these elements. At least because the alleged combination of Fitton, Shany and Foschini does not teach or suggest every element of claim 42, claim 42 is allowable over the alleged combination of Fitton, Shany and Foschini.

Claims 4, 5, 31 and 32

Claims 4, 5, 31 and 32 were rejected under 35 U.S.C. §103 as being unpatentable over Hwang in view of Fitton. Applicants respectfully request reconsideration and withdrawal of the rejection.

With respect to claims 4 and 5, these claims depend from claim 1 and therefore recite “obtaining first data to be delivered to multiple user devices via a common channel; obtaining second data to be delivered to a specific user device via a dedicated channel; acquiring channel information for a common channel between a transmitter and said specific user device; and generating a transmit signal for said specific user device using said first data (i.e., common channel data), said second data (i.e. dedicated channel data), and said channel information (i.e., for the common channel), said transmit signal to be transmitted from said transmitter to said specific user device via said dedicated channel.” As discussed above, Hwang does not teach or suggest at least all these elements. Similarly, Fitton also does not teach or suggest at least all of these elements. At least because the alleged combination of Hwang and Fitton does not teach or

suggest every element of each of claims 4 and 5, claims 4 and 5 are allowable over the alleged combination of Hwang and Fitton.

With respect to claims 31 and 32, these claims depend from claim 27 and therefore recite “generating transmit signals to be transmitted to user devices associated with said first class without using dirty paper techniques; and generating transmit signals to be transmitted to user devices associated with said second class using said first data, said second data, and said channel information.” As discussed above, the Office Action failed to establish that Hwang teaches or suggests at least these elements. Also, the Office Action failed to establish that Fitton teaches or suggests at least all of these elements. At least because the Office Action failed to establish that the alleged combination of Hwang and Fitton teaches or suggests every element of each of claims 31 and 32, the Office Action did not establish a prima facie case of obviousness.

Claim 33: Rejected over Hwang in View of Ben-David

Claim 33 was rejected under 35 U.S.C. §103 as being unpatentable over Hwang in view of U.S. Patent Application Pub. No. 2004/0101034 (hereinafter “Ben-David”). Applicants respectfully traverse the rejection.

Claim 33 depends from claim 27 and therefore recite “generating transmit signals to be transmitted to user devices associated with said first class without using dirty paper techniques; and generating transmit signals to be transmitted to user devices associated with said second class using said first data, said second data, and said channel information.” As discussed above, the Office Action failed to establish that Hwang teaches or suggests at least these elements. Also, the Office Action failed to establish that Ben-David teaches or suggests at least all of these elements. At least because the Office Action failed to establish that the alleged combination of Hwang and Ben-David teaches or suggests every element of each of claim 33, the Office Action did not establish a prima facie case of obviousness.

Claim 40: Rejected over Fitton in View of Ben-David

Claim 40 was rejected under 35 U.S.C. §103 as being unpatentable over Fitton in view of Ben-David). Applicants respectfully traverse the rejection.

Claim 40 depends from claim 35 and therefore recites “an interference unit to collect data to be delivered to user devices within a first class via corresponding dedicated channels and to use the collected data to generate a composite interference signal; and a transmit signal generator to generate transmit signals to be transmitted to user devices associated with said first class without using dirty paper techniques, and to generate transmit signals to be transmitted to user devices within a second class via corresponding dedicated channels using said composite interference signal, dedicated data to be delivered to said user devices within said second class, and channel information associated with said user devices within said second class.” As discussed above, the Office Action failed to establish that Fitton teaches or suggests at least all of these elements. Also, the Office Action failed to establish that Ben-David teaches or suggests at least all of these elements. At least because the Office Action failed to establish that the alleged combination of Fitton and Ben-David teaches or suggests every element of each of claim 40, the Office Action did not establish a prima facie case of obviousness.

Conclusion

In view of the above, Applicants believe the pending application is in condition for allowance.

Dated: February 27, 2008

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